Adapting to Challenges Presented in Training New Students in Laboratory Techniques During COVID-19

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Introduction

In late February of 2020, the CDC reported community spreading of COVID-19 in the United States (1). By late March, many schools across the country was mandated to shut down to slow the spread and flatten the curve. Beginning in fall 2020, PCOM started slowly opening up research labs again to students with restrictions in capacity and returning onto campus (2). The new standards affected the normal timeline of introducing new students into the lab. The Bravo research laboratory takes an average of 20 students in each year, and with a limited number of students allowed to be trained at the time, the lab management personnel had to adapt to be able to train them all. To counteract this, a plan to create virtual methods in preparing incoming students was started. The goal is to have students prepared to enter the lab in a safe manner while following all guidelines instructed by PCOM.

Methods

Video Recording: Video footage was recorded following proper safety procedures set in place by PCOM. The footage was captured using a digital video camera (model:HDV-604S).

Video Editing: All video footage was transferred onto a Macbook Pro using a SD memory card reader. The recorded video files were imported into the video editing software iMovie for editing. The finished video was converted into a playable mp4 file and uploaded into a Google Drive folder and shared to the respective parties.

Virtual Training: Other online and mobile applications were used to communicate with students during training and orientation. The Apple application FaceTime as well as Google Meets to conduct virtual meetings and progress check ins. All virtual information were given through powerpoint presentations during virtual meetings.

Results

Orientations:

- Facetime was used to train students in changing oxygen tanks in the LAR for hyperoxia experiments.
- Troy used GoogleMeet to present a powerpoint to provide the LAR orientation for incoming students.
- Immunohistochemistry and Microscope training were conducted using GoogleMeet to present a powerpoint prior to a short in person demonstration to shorten exposure.
- Video recordings for the three major techniques in the laboratory were stored at a google drive and QR codes were sent to students to observe the videos remotely.
- 14 Students were successfully trained using this methods with limited interaction with the RSS and able to work independently while complying with CDC and PCOM guidelines.

Videos:

OCT Video

Histology Video

ERG Video

Conclusions

These three videos serve as a way for incoming new students to become familiar with the various experimental protocols required in their project and allows them a smooth transition onto campus. New students who are taking required CITI courses prior to getting clearance will be able to start familiarizing themselves with required lab techniques. Returning students coming back into the lab will also be able to use these videos to refresh their techniques themselves prior to their day back in the lab. The powerpoints will provide students with proper lab safety/protocols as reference in the future. The plan is to have these created media files used as a reference for all future students entering the lab when in-person training resumes as a standard in training. These virtual tools will provide flexibility for all future incoming students after restrictions are lifted. The possibility of creating similar videos is high as new protocols are introduced.

References

1. Jorden MA, Rudman SL, et al. Evidence for Limited Early Spread of COVID-19 Within the United States, January–February 2020. MMWR Morb Mortal Wkly Rep 2020;69:680–684. DOI: http://dx.doi.org/10.15585/mmwr.mm6922e1external icon
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